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ML Chief Scientist caps 38-year Air Force career

by Sue Baker, ASC Public Affairs

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — When Dr. Wade Adams, chief scientist, Materials and Manufacturing Directorate, Air Force Research Laboratory joined the service in 1964 as a U.S. Air Force Academy cadet, he never expected to do anything else but fly fighter jets.

When he retired earlier this month, Dr. Adams completed a diverse and fascinating career spanning 38 years doing the unexpected, taking risks, and learning a lot about himself in the process.

"I was 17, and wore the blue suit six months before I was even old enough to register for the draft," Dr. Adams recalled. "When I was 22 or 23, the draft board called my mother and told her I had never registered for the draft. She told them, 'Yeah, he's been in the Air Force five or six years now.' Believe it or not, they still told her I needed a draft card!"

"I wanted to be a jet fighter pilot, so I hung around airports a lot when I was a kid in the cowboy town of Canadian, deep in the Panhandle of Texas," he said. "There was a dinky, 2,500-foot dirt strip in our hometown that my grandfather ran for a few years. We'd get maybe one Piper Cub or Cessna a week – it would come in, I'd gas it up, and look pie-eyed in front of the pilots, who sometimes asked me if I wanted to go for a joyride."

After hanging around airplanes and bumming enough rides, Adams decided he wanted to fly for a living. "When I was ready to graduate from high school in 1964, I didn't apply anywhere else but the Air Force Academy," he said. Adams got through the congressional competition, and out of 18 finalists, won an appointment. "If I hadn't gotten the appointment, I'd have been stuck, because I didn't apply to any other colleges. It was kinda (sic) crazy, but I just knew I was going to go there."

His work in science and math at Canadian High School prepared him well for the rigors of the academy, Adams said. "I was the 1963 Texas state slide-rule champion, and still have my special, Pickett slide-rule as a reminder of that time. Nowadays, people don't even know what slide-rules are."

The first career challenge for Adams: surviving the academy.

"It was a pretty brutal, hostile environment," Adams said. "My first year was pure hell, emotionally, physically, everything. They did their best to get you to quit, because the objective was to wash out anybody who had weaknesses.

"When I look back on it, I had no idea of how I got through it. What you came to realize was that you had more inner strength than you knew, and they were pulling it out of you by just running you until you dropped, and yelling at you. You learned very quickly that being yelled at was no big deal – all summer long, all 'Doolie' year long."

Adams enjoyed flying while at the academy. "On our second summer trip, we got joyrides in T-33s, flew F-101s and all kinds of transport airplanes, including C-47s, just to get the feel of 'em (sic). In the Third Lieutenant program, I got to fly an F-4 and a B-52. Those were great experiences, very motivational."

As a 19-year-old fighter pilot for one summer at Albuquerque, N.M., Cadet Adams said he learned two very important life skills: how to drink beer and ride motorcycles. "We spent a lot of time at the O Club, playing liar's dice – bluffing the next guy into thinking you had more than you did. Of course, the drinking age was 18 at the time, and you couldn't be a fighter pilot without drinking beer."

Even then, Adams was beginning to sense that flying was not all it was cracked up to be. "It's been said that being a pilot is 99 percent boredom and one percent terror," he recalled. "It was the boredom part that was making me wonder about the wisdom of being a pilot. I got hitched up with an advisor at the academy, who helped me decide to become a physics major.

"The combination of getting into science, having my eyes go bad, and allergies get worse, disqualified me for pilot duty," Adams admitted. "So my first career dream went totally by the wayside. Fortunately, I had science to fall back on."

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At that time, officers in the Air Force still were being encouraged to pursue science and technology careers, Adams said. "When I graduated in 1968, it was still a good career to be a technical officer in the Air Force. There still were technical generals – and a lot of memories of those original gods like Von Karmann were still around. The laboratories were strong, and the culture that had created the Air Force in 1947 was still celebrated 21 years later."

Being a technologist was prized and valued then, Adams said. "If there's been one thing that I've been very disappointed about, and worked to try to change, it's that the Air Force has decreased valuing military officers who are technical over the past 20-20 years. We can deny that — but in fact, the near-demise of the Air Force Institute of Technology, and the statistics for today's top generals (very few have technical degrees, and almost none have advanced technical degrees) tells me otherwise.

"I think the worst came when a chief scientist of the Air Force came to AFIT to give a graduation address and announced that there was no need for military officers with Ph.D. degrees," Adams said. "To me, that was the epitome of the Air Force saying that it was going to publicly voice its technical nature, while privately moving far away from that viewpoint. Recent wars have indeed proven that we are wildly successful with our technology."

Despite many Air Force civilians with doctoral degrees, Adams said it's the service's military leadership who must set the tone. "We have not had very many of those — none recently — who value technology and have made it to the top. All of our technology-oriented generals — Lyles, Nielsen, Herrelko and Paul, for example — have been super, but they've been an extreme minority.

"How do we claim that we are a technological Air Force, if we don't value technology as a career, for at least a reasonable number of our officers?" Adams asked. "So many of these young guys and gals have gotten out because they don't see a future for themselves in the Air Force as military officers who are primarily technologists."

But there is a way to turn this situation around, Adams said.

"The research council of AFRL has created a 'vision' briefing that glimpses the future of Air Force technology 20 to 25 years out. Our technical laboratory colonels brief all graduating Air Force Academy seniors, and ask them where they think the Air Force gets its new technologies. It's not magic, plucked off a tree — you don't just throw money at contractors and get your technology — you have to have an integrated force of technologists who start in the lab and go through the acquisition process to develop the technology, who are smart enough to be able to get the technology into the hands of the fighting Air Force.

"It's been a challenge – there's always pressure from the Department of Defense and above, to do away with the laboratories and just buy technology, contract it out, and civilianize it," Adams said. "To me, that's a terrible mistake. You've got to have people who are connected to the operators who have flown, been out there, operated spacecraft, worked at the 'pointy end of the spear,' and also can do techno-speak, to connect the brilliant scientists and engineers we have in the laboratories and elsewhere in the Air Force to the warfighter.

When you make that connection, it's very powerful. You don't get that with a contractor, or only civil servants, because they are not at risk — not out there with the job of defending the country. They are doing a job for the Air Force, but they don't have the military viewpoint of war itself."

Adams believes the Air Force needs to celebrate, cherish and promote its "technology warriors" to suitable positions, from which they can positively influence how technology is developed in the future – to keep the "seed corn" growing. "I'm an advocate for strong laboratory structure and strong technologists in the Air Force, who are smart enough to know what to buy now and what to go for in the future," he said. "There are a lot of smart people out there in the rest of the world who don't like us – and they are going to be depending on technology to hurt us. To avoid technological surprise, we've got to be ahead of them."

In addition to having strong labs, Adams believes the capabilities must be organic, grown in-house. "You can't just go out and purchase that," he said. "You also have to run some of your future warrior-leaders through the labs and the whole acquisition system, so they know how Air Force technology operates and can best be supported in the future." **@**